WHAT IS CLAIMED IS:

1. A composition for preventing tooth decay in a tooth treated with electromagnetic radiation, said composition comprising fluoride at a concentration of less than 45 ppm fluoride to (0.01%) to 0.002 ppm fluoride.

2. The composition of Claim 1 wherein said composition is a mouthwash.

3. The composition of Claim 1 wherein said composition is provided on a patch.

4. A method of treating a living tooth in a mammal's mouth, the tooth having localized sites containing concentrations of water or organic material beneath and in proximity to the surface of the tooth, said method comprising:

irradiating the surface of said tooth with light, having a wavelength in the range of between from about 400nm to about 810n, and an energy density sufficient to vaporize water and organic material without damaging the pulp of the tooth, wherein said treatment heats the localized sites to a temperature of no more than about 250 °C.

5. The method of Claim 4 further comprising bonding a chemical agent to the crystalline structures of the tooth after removal of the organic compound.

6. The method of Claim 4, wherein said light beam is a coherent light source.

7. The method of Claim 6, wherein said coherent light source is a laser.

8. The method of Claim 7, wherein said laser is an argon laser.

9. The method of Claim 7, wherein said laser comprises a diode laser.

10. The method of Claim 9, wherein the wavelength of the diode laser is selected from the group consisting of: red, green, blue, and yellow.

11. The method of Claim 4, wherein said light beam is an noncoherent light source.

12. The method of Claim 8, wherein said noncoherent light source is an LED.

13. The method of Claim 8, wherein said noncoherent light source is a wavelength from the IR spectra selected from the group consisting of green, blue, yellow, and red light.

14. The method of Claim 5 wherein said chemical agent is fluoride.

15. The method of Claim 15 wherein the effective concentration of fluoride is less than or equal to 200 ppm of stannous fluoride (0.08%) or 1000 ppm of sodium fluoride (0.275%).

16. The method of Claim 8 wherein the argon laser beam is applied at 250mJ.

17. The method of Claim 8 wherein the laser is applied for 10 seconds for each treated surface.

18. The method of Claim 14, wherein said fluoride acts by binding to hydroxide groups within the hydroxyapatite crystal.

19. The method of Claim 4, wherein said tooth is treated for a period of time of more than 1 sec for each treated surface.

20. The method of Claim 4, wherein said light beam has an energy density below about 65 J/cm^2.

21. The method of Claim 4, wherein said light beam has an energy density below about 30 J/cm^2.

22. The method of Claim 4, wherein said light beam has an energy density below about 12 J/cm^2.

23. The method of Claim 4, wherein said treatment heats the localized sites to a temperature of between about 50 and 200°C.

24. The method of Claim 4 further comprising treating with fluoridated mouthwash after treatment.

25. The method of Claim 24 wherein said mouthwash is applied daily at least one time.

26. The method of Claim 4 further comprising treating with fluoridated toothpaste after treatment.

27. The method of Claim 25 wherein said mouthwash contains 45 ppm fluoride to (0.01%) to 0.002 ppm fluoride.

28. The method of Claim 10 further comprising continually providing fluoride to the teeth for a period of from about 1 day to about 80 years.

29. The method of Claim 28 wherein said fluoride is applied using a patch.

30. A method of treating a living tooth in a mammal's mouth, the tooth having localized sites containing concentrations of water beneath and in proximity to the surface of the tooth, said method comprising,

contacting the tooth with fluoride and leaving the fluoride on the tooth for at least one minute, and

irradiating said tooth with light having a wavelength in the range of between about 400 nm to about 810 nm, and an energy and an energy density sufficient to vaporize water up to 50 microns below the surface of the tooth without damaging the pulp of the tooth, wherein said treatment causes the fluoride to bind to the localized sites.

31. The method of Claim 30, wherein the vaporization of water occurs from about 3 microns to about 50 microns.

32. The method of Claim 30, wherein said tooth is irradiated for a period of time of more than 1 sec for each treated surface.

33. The method of Claim 30, wherein said light beam has an energy density below about 65 J/cm^2.

34. The method of Claim 30, wherein said light beam has an energy density below about 30 J/cm^2.

35. The method of Claim 30, wherein said light beam has an energy density below about 12 J/cm^2.

36. The method of Claim 30, wherein said treatment heats the localized sites to a temperature of no more than 250 °C.

37. A home treatment kit for the treatment of a tooth comprising: a fluoride mixture for application to the tooth, a light source which produces wavelengths in the range of between about 400nm to about 750 nm adapted to illuminate the fluoride mixture, and at least one of a fluoride mouthwash, and a fluoride patch.

38. The kit of Claim 37, wherein said light beam is an noncoherent light source.

39. The kit of Claim 37, wherein said noncoherent light source is an LED.

40. The kit of Claim 37, wherein said noncoherent light source is a wavelength from the IR spectra selected from the group consisting of green, blue, yellow, and red.

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41. The kit of Claim 37, wherein said fluoride mixture comprises fluoride at a concentration of less than 45 ppm fluoride to (0.01%) to 0.002 ppm fluoride